

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 September 2005 (15.09.2005)

PCT

(10) International Publication Number
WO 2005/086211 A1

(51) International Patent Classification⁷: **H01L 21/268**,
21/20, 21/336, 29/786

(21) International Application Number:
PCT/JP2005/004036

(22) International Filing Date: 2 March 2005 (02.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004-060511 4 March 2004 (04.03.2004) JP

(71) Applicant (for all designated States except US): **SHARP
KABUSHIKI KAISHA** [JP/JP]; 22-22, Nagaike-cho,
Abeno-ku, Osaka-shi, Osaka 545-8522 (JP).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **TAGUSA, Yasunobu**
[JP/JP]; 1420-2-205, Midorigaoka, Ikoma-Shi., Nara 630-
0262 (JP).

(74) Agent: **SANO, Shizuo**; Tenmabashi-Yachiyo Bldg.
Bekkan,, 2-6, Tenmabashi-Kyomachi, Chuo-Ku, Os-
aka-Shi, Osaka 540-0032 (JP).

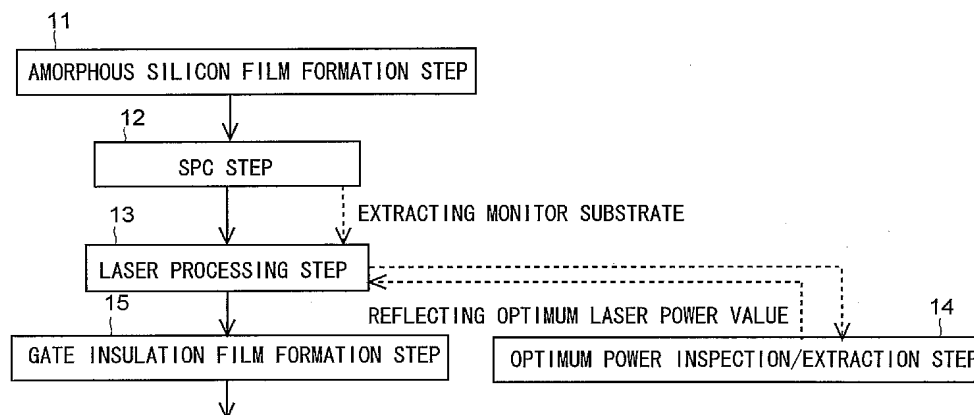
(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,
ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

[Continued on next page]

(54) Title: METHOD FOR FABRICATING A SEMICONDUCTOR DEVICE AND APPARATUS FOR INSPECTING A SEMI-
CONDUCTOR



(57) Abstract: According to the invention, in a method for fabricating a semiconductor device and an apparatus for inspecting a semiconductor, as shown in the flow chart in Fig. 2, in a laser processing step 13, laser processing is performed at different laser powers at different positions of a monitor substrate, one extracted from substrates having undergone an SPC step 12, to form polycrystalline silicon film over the entire area of the substrate. Thereafter, in an optimum power inspection/extraction step 14, the polycrystalline silicon film formed with varying film quality on the monitor substrate is inspected on inspection equipment to determine the optimum laser power. Then, in a laser processing step 13, the surface of the subsequent substrates having undergone the SPC step 12 is irradiated with laser at the optimum laser power. Thus, high-quality polycrystalline silicon film is formed over the entire area of the substrate.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.